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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,153	10/27/2003	Eric Edward Lennon	18231	3016
23556 7590 02/09/2007 KIMBERLY-CLARK WORLDWIDE, INC. 401 NORTH LAKE STREET NEENAH, WI 54956			EXAMINER BUTLER, PATRICK	
			ART UNIT	PAPER NUMBER
			1732	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/09/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/09/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/694,153

Applicant(s)

LENNON ET AL.

Examiner

Patrick Butler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 and 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11, 13-16 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

The Applicant's Amendments and Accompanying Remarks, filed 22 September 2006, have been entered and have been carefully considered. No Claims are new, Claims 2, 11, 13, and 15 are amended, Claim 12 is canceled, and Claims 1-11 and 13-23 are pending, with Claims 6-10 and 17-22 being withdrawn.

In view of Applicant's amendment of claim 2 to remove a relative term, the Examiner withdraws the previously set forth 35 U.S.C. 112, second paragraph rejection as detailed in the Claim Rejections – 35 USC 112 section of the Office Action dated 22 March 2006.

Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

### ***Election/Restrictions***

Applicant's affirmation of election without traverse of Group I, Claims 1-5, 11-16, and 23, in the reply filed on 22 September 2006 is acknowledged.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 11, and 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/694,420. Although the conflicting claims are not identical, they are not patentably distinct from each other because they claim forming fiber, electrostatically directing it, and forming a web.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 11, and 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, and 20 of copending Application No. 10/325,140. Although the conflicting claims are not identical, they are not patentably distinct from each other because they claim forming fiber, electrostatically directing it, and forming a web.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 11, and 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/687,006. Although the conflicting claims are not identical, they are

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not patentably distinct from each other because they claim forming fiber, redirecting it, which would include electrostatically, and forming a web.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1 relied upon for translation and citations).

With respect to Claim 11, Schmit teaches forming fibers [0004], subjecting the fibers to pneumatic attenuation force in a drawing slot, the attenuation force imparting a velocity to the fibers [0004], reducing the velocity of the fibers in a diffusion chamber formed between opposed diverging sidewalls [0004], subjecting the fibers to an applied electrostatic charge while the fibers are in the diffusion chamber by one electrostatic charging unit 11 located upon a diverging sidewall 15 and a second electrostatic charging unit 8 located on the other diverging sidewall 14 (see [0006], [0020], [0021],

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and fig. 2 and 3), and collecting the fibers into a web on a moving forming surface (see Fig. 1, Ref. No. 7).

With respect to Claim 15, Schmit teaches that the diffuses can have no openings (unvented) (see [0010]. Though Schmit states “preferably” with respect to having vents, this is merely a preferred embodiment.

Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Taylor (US Patent No. 6,783,722).

With respect to Claim 11, Taylor teaches providing a plurality of fibers F, subjecting the fibers to a pneumatic attenuation force in a drawing slot 18, the attenuation force imparting a velocity on the fibers, reducing the velocity of the fibers in a diffusion chamber 44 and subjecting the fibers to an applied electrostatic charge applied by a charging units 58 located diverging walls 42, and collecting the filaments on a moving web 30. The charging units 58 and 58 are oppositely directed and located on each of the diverging walls 42 and 42 (see Fig. 2). The units are charging units principally because they are charging the space in front of the wall to direct the fibers (see col. 5, line 63 to col. 6, line 13).

Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Maggio '134 (WO 00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations).

With respect to Claim 23, Maggio '134 teaches providing a plurality of fibers F, subjecting the fibers to an attenuation force in a drawing slot (at Fig. 3, Ref. No. 13), subjecting the fibers to a electrostatic charging unit 11 located on the sidewall, reducing

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the velocity of the fibers in a diffusion chamber being formed substantially between opposed diverging sidewalls 15, and collecting the fibers onto a web of a moving surface 7. The attenuation force is provided by attenuation air entering the drawing slots 21 located on both sidewalls. Thus, the totality of attenuation air comprises attenuation air entering the drawing slot only from the drawing slot sidewall opposite the electrostatic charging unit's wall, as required by the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 02/00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations).

With respect to Claim 1, Haynes '071 teaches providing a plurality of fibers 12, subjecting the fibers to a pneumatic attenuation force in a drawing slot 14, the attenuation force imparting a velocity to the fibers, subjecting the fibers to an applied electrostatic charge before the fibers at the end of the draw slot using electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1), and collecting the fibers into a web on a moving surface 26.

Haynes '071 does not expressly teach providing a diffusion chamber.

Maggio teaches providing a diffusion chamber 6 after the drawing slot 5.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Maggio '134's diffusion chamber with Haynes '071 nonwoven web process in order to adjust the width of the bundle of fibers and impact speed of the filaments on the receiving belt (see col. 3, lines 39-43).

With respect to Claim 3, Maggio '134's sidewalls are unvented (See Fig. 3, Ref. No. 15).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations) as applied to Claim 1, and further in view of Trimble (WO 93/21370).

With respect to Claim 2, Haynes '071 and Maggio '134 teach a process of making a non-woven as previously described.

Haynes '071 and Maggio '134 do not appear to expressly teach having electrostatic charging units that are in a staggered configuration.

Trimble teaches making the electrostatic charging units locations staggered up and down rather than all in a single line (see Fig. 4, Ref. No. 74 and page 15, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Haynes '071's and Maggio '134's non-woven web forming process in order to form a more even distribution of filaments in the web (see Trimble, page 20, lines 14-16) and because it is an alternative embodiment of a known charging unit configuration.



Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 02/00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations) as applied to Claim 1, and further in view of Haynes '379 (US Patent No. 6,117,379).

With respect to Claim 4, Haynes '071 and Maggio '134 teach a process of making a non-woven as previously described.

Haynes '071 and Maggio do not appear to expressly teach that the pneumatic attenuation force is provided by perturbed attenuation air.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the drawing chambers 16 of Haynes '071 and Maggio '134 in order to quench or cool via better penetration of the gas among the filaments (see Haynes '379 col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

With respect to Claim 5, Haynes '071 and Maggio '134 teach a process of making a non-woven as previously described.

Haynes '071 and Maggio '134 do not appear to expressly teach at least one of the opposed diverging sidewalls comprises at least one vortex generator.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the (Maggio '134's) diffusion chamber 14 of Haynes '071 and Maggio '134 because it would cause gas flow turbulence (see Haynes '379 col. 1, lines 62-67), and it is desirous to slow down the air flow at the exit of the diffusion chamber in order to distribute the filaments randomly over a receiving belt (see Maggio '134, col. 1, lines 55-57).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; US Patent No. 6,974,316 B2 relied upon for translation and citations) in view of Haynes '071 (WO 02/52071).

With respect to Claim 11, Maggio teaches providing a plurality of fibers F, subjecting the fibers to a pneumatic attenuation force in a drawing slot (see Fig. 3, at Ref. No. 13), reducing the velocity of the fibers in a diffusion chamber 6, subjecting the fibers to an applied electrostatic charge 17 while the fibers are in the diffusion chamber, and collecting the fibers on a moving web surface 7.

Maggio '381 does not appear to expressly teach having oppositely directed electrostatic charging units and at least one electrostatic charging unit is located upon each of the diverging sidewalls.

Haynes '071 teaches that subjecting the fibers to electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1),

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Haynes '071's oppositely directed charging units in the

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diverging sidewalls of Maggio '381 in order to give improvements maximum overall voltage (see Haynes '071, page 16, Table 1), improve formation (page 16, lines 33-35), and because it is a known configuration for electrostatic charging.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; US Patent No. 6,974,316 B2 relied upon for translation and citations) in view of Haynes '071 (WO 02/52071) as applied to Claim 11, and further in view of Trimble (WO 93/21370).

With respect to Claim 13, Maggio '381 and Haynes '071 teach a process of making a non-woven as previously described.

Maggio '381 and Haynes '071 do not appear to expressly teach having one electrostatic charging unit located substantially closer to the diffusion chamber than at least one other electrostatic charging unit.

Trimble teaches making the electrostatic charging units locations staggered (substantially closer to the diffusion chamber than at least one other electrostatic charging unit) (see Fig. 4, Ref. No. 74 and page 15, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Maggio '381's and Haynes '071's non-woven web forming process in order to form a more even distribution of filaments in the web (see Trimble, page 20, lines 14-16) and because it is an alternative embodiment of a known charging unit configuration.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1 relied upon for translation and citations) as applied to Claim 11, and further in view of Trimble (WO 93/21370).

With respect to Claim 13, Schmit teaches a process of making a non-woven as previously described.

Schmit does not appear to expressly teach having one electrostatic charging unit located substantially closer to the diffusion chamber than at least one other electrostatic charging unit.

Trimble teaches making the electrostatic charging units locations staggered (substantially closer to the diffusion chamber than at least one other electrostatic charging unit) (see Fig. 4, Ref. No. 74 and page 15, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Schmit's non-woven web forming process in order to form a more even distribution of filaments in the web (see Trimble, page 20, lines 14-16) and because it is an alternative embodiment of a known charging unit configuration.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; US Patent No. 6,974,316 B2 relied upon for translation and citations) in view of Haynes '071 (WO 02/52071) as applied to Claim 11 above, and further in view of Haynes '379 (US Patent No. 6,117,379).

Maggio '381 does not appear to expressly teach that the pneumatic attenuation force is provided by perturbed attenuation air.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the Maggio '134 in order to quench or cool via better penetration of the gas among the filaments (see Haynes '379 col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1 relied upon for translation and citations) as applied to Claim 11, and further in view of Haynes '379 (US Patent No. 6,117,379).

With respect to Claim 14, Schmit teaches a process of making a non-woven as previously described.

Schmit does not appear to expressly teach that the pneumatic attenuation force is provided by perturbed attenuation air.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the slot of Schmit in order to quench or cool via better penetration of the gas among the filaments (see Haynes '379 col. 1, lines 62-67). This would reduce time spent between

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die and slot for quenching or cooling because some or more quenching would occur inside the slot.

With respect to Claim 16, Schmit teaches a process of making a non-woven as previously described.

Schmit does not appear to expressly teach that at least one of the opposed diverging sidewalls comprises at least one vortex generator.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the from the lateral openings<sup>16</sup> of the diffusion chamber 14 of Schmit because it would cause gas flow turbulence (see Haynes '379 col. 1, lines 62-67), which would spread the fiber curtain, it is desirous to spread the curtain since it increases uniformity of the web (see Schmit [0004]).

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 02/00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations) and Kisler (US Patent No. 4,517,143).

With respect to Claim 1, Haynes '071 teaches providing a plurality of fibers 12, subjecting the fibers to a pneumatic attenuation force in a drawing slot 14, the

attenuation force imparting a velocity to the fibers, subjecting the fibers to an applied electrostatic charge before the fibers at the end of the draw slot using electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1), and collecting the fibers into a web on a moving surface 26.

Haynes '071 does not expressly teach providing a diffusion chamber.

Maggio teaches providing a diffusion chamber 6 after the drawing slot 5.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Maggio '134's diffusion chamber with Haynes '071 nonwoven web process in order to adjust the width of the bundle of fibers and impact speed of the filaments on the receiving belt (see col. 3, lines 39-43).

If "two or more electrostatic charging units" is limited to exclude electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1), as being "two or more electrostatic charging units," then Haynes '071 does not expressly teach having "two or more electrostatic charging units."

Kisler teaches that when imparting charges, the charge can often vary significantly after an electrostatic charging (see fig. 1A, ref. no. 28; fig. 2, sections A and B). Thus, multiple charging steps using opposite polarity will produce a uniformly charged material (oppositely directed electrostatic charging units) (see col. 2, lines 31-49; fig. 1A, ref. no. 28 and 42; fig. 2, sections A, B, and D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kisler's teaching of using multiple, oppositely-directed electrostatic charging units in the process taught by Haynes '071 because they are

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within the same field and solve the same problem of desiring to impart a charge and to impart the charge uniformly (see Kisler, col. 2, lines 31-49; fig. 1A, ref. no. 28 and 42; fig. 2, sections A, B, and D).

With respect to Claim 3, Maggio '134's sidewalls are unvented (See Fig. 3, Ref. No. 15).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations) and Kisler (US Patent No. 4,517,143) as applied to Claim 1, and further in view of Trimble (WO 93/21370).

With respect to Claim 2, Haynes '071 and Maggio '134 teach a process of making a non-woven as previously described.

Haynes '071 and Maggio '134 do not appear to expressly teach having electrostatic charging units that are in a staggered configuration.

Trimble teaches making the electrostatic charging units locations staggered up and down rather than all in a single line (see Fig. 4, Ref. No. 74 and page 15, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Haynes '071's and Maggio '134's non-woven web forming process in order to form a more even distribution of filaments in the web (see Trimble, page 20, lines 14-16) and because it is an alternative embodiment of a known charging unit configuration.



Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes '071 (WO 02/52071) in view of Maggio '134 (WO 02/00/65134 A1; US Patent No. 6,966,762 B1 relied upon for translation and citations) and Kisler (US Patent No. 4,517,143) as applied to Claim 1, and further in view of Haynes '379 (US Patent No. 6,117,379).

With respect to Claim 4, Haynes '071 and Maggio '134 teach a process of making a non-woven as previously described.

Haynes '071 and Maggio do not appear to expressly teach that the pneumatic attenuation force is provided by perturbed attenuation air.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the drawing chambers 16 of Haynes '071 and Maggio '134 in order to quench or cool via better penetration of the gas among the filaments (see Haynes '379 col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

With respect to Claim 5, Haynes '071 and Maggio '134 teach a process of making a non-woven as previously described.

Haynes '071 and Maggio '134 do not appear to expressly teach at least one of the opposed diverging sidewalls comprises at least one vortex generator.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the (Maggio '134's) diffusion chamber 14 of Haynes '071 and Maggio '134 because it would cause gas flow turbulence (see Haynes '379 col. 1, lines 62-67), and it is desirous to slow down the air flow at the exit of the diffusion chamber in order to distribute the filaments randomly over a receiving belt (see Maggio '134, col. 1, lines 55-57).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; US Patent No. 6,974,316 B2 relied upon for translation and citations) in view of Haynes '071 (WO 02/52071) and Kisler (US Patent No. 4,517,143).

With respect to Claim 11, Maggio teaches providing a plurality of fibers F, subjecting the fibers to a pneumatic attenuation force in a drawing slot (see Fig. 3, at Ref. No. 13), reducing the velocity of the fibers in a diffusion chamber 6, subjecting the fibers to an applied electrostatic charge 17 while the fibers are in the diffusion chamber, and collecting the fibers on a moving web surface 7.

Maggio '381 does not appear to expressly teach having oppositely directed electrostatic charging units and at least one electrostatic charging unit is located upon each of the diverging sidewalls.

Haynes '071 teaches that subjecting the fibers to electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Haynes '071's oppositely directed charging units in the diverging sidewalls of Maggio '381 in order to give improvements maximum overall voltage (see Haynes '071, page 16, Table 1), improve formation (page 16, lines 33-35), and because it is a known configuration for electrostatic charging.

If "two or more electrostatic charging units" is limited to exclude Haynes '071's electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1), as being "two or more electrostatic charging units," then Maggio '381 in view of Haynes '071 does not expressly teach having "two or more electrostatic charging units."

Kisler teaches that when imparting charges, the charge can often vary significantly after an electrostatic charging (see fig. 1A, ref. no. 28; fig. 2, sections A and B). Thus, multiple charging steps using opposite polarity will produce a uniformly charged material (oppositely directed electrostatic charging units) (see col. 2, lines 31-49; fig. 1A, ref. no. 28 and 42; fig. 2, sections A, B, and D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kisler's teaching of using multiple, oppositely-directed electrostatic charging units in the process taught by Maggio '381 in view of Haynes '071 because they are within the same field and solve the same problem of desiring to impart a charge and to impart the charge uniformly (see Kisler, col. 2, lines 31-49; fig. 1A, ref. no. 28 and 42; fig. 2, sections A, B, and D).

Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1 relied upon for translation and citations) in view of Kisler (US Patent No. 4,517,143).

With respect to Claim 11, Schmit teaches forming fibers [0004], subjecting the fibers to pneumatic attenuation force in a drawing slot, the attenuation force imparting a velocity to the fibers [0004], reducing the velocity of the fibers in a diffusion chamber formed between opposed diverging sidewalls [0004], subjecting the fibers to an applied electrostatic charge while the fibers are in the diffusion chamber by one electrostatic charging unit 11 located upon a diverging sidewall 15 and a second electrostatic charging unit 8 located on the other diverging sidewall 14 (see [0006], [0020], [0021], and fig. 2 and 3), and collecting the fibers into a web on a moving forming surface (see Fig. 1, Ref. No. 7).

If "two or more electrostatic charging units" is limited to exclude charging unit 11 located upon a diverging sidewall 15 and a second electrostatic charging unit 8 located on the other diverging sidewall 14 as being "two or more electrostatic charging units," then Schmit does not expressly teach having "two or more electrostatic charging units."

Kisler teaches that when imparting charges, the charge can often vary significantly after an electrostatic charging (see fig. 1A, ref. no. 28; fig. 2, sections A and B). Thus, multiple charging steps using opposite polarity will produce a uniformly charged material (oppositely directed electrostatic charging units) (see col. 2, lines 31-49; fig. 1A, ref. no. 28 and 42; fig. 2, sections A, B, and D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kisler's teaching of using multiple, oppositely-directed electrostatic charging units in the process taught by Schmit because they are within the same field and solve the same problem of desiring to impart a charge and to impart the charge uniformly (see Kisler, col. 2, lines 31-49; fig. 1A, ref. no. 28 and 42; fig. 2, sections A, B, and D).

With respect to Claim 15, Schmit teaches that the diffuses can have no openings (unvented) (see [0010]. Though Schmit states "preferably" with respect to having vents, this is merely a preferred embodiment.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; US Patent No. 6,974,316 B2 relied upon for translation and citations) in view of Haynes '071 (WO 02/52071) and Kisler (US Patent No. 4,517,143) as applied to Claim 11, and further in view of Trimble (WO 93/21370).

With respect to Claim 13, Maggio '381 and Haynes '071 teach a process of making a non-woven as previously described.

Maggio '381 and Haynes '071 do not appear to expressly teach having one electrostatic charging unit located substantially closer to the diffusion chamber than at least one other electrostatic charging unit.

Trimble teaches making the electrostatic charging units locations staggered (substantially closer to the diffusion chamber than at least one other electrostatic charging unit) (see Fig. 4, Ref. No. 74 and page 15, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Maggio '381's and Haynes '071's non-woven web forming process in order to form a more even distribution of filaments in the web (see Trimble, page 20, lines 14-16) and because it is an alternative embodiment of a known charging unit configuration.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1 relied upon for translation and citations) in view of Kisler (US Patent No. 4,517,143) as applied to Claim 11, and further in view of Trimble (WO 93/21370).

With respect to Claim 13, Schmit teaches a process of making a non-woven as previously described.

Schmit does not appear to expressly teach having one electrostatic charging unit located substantially closer to the diffusion chamber than at least one other electrostatic charging unit.

Trimble teaches making the electrostatic charging units locations staggered (substantially closer to the diffusion chamber than at least one other electrostatic charging unit) (see Fig. 4, Ref. No. 74 and page 15, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Trimble's charging unit positions with Schmit's non-woven web forming process in order to form a more even distribution of filaments in the web (see Trimble, page 20, lines 14-16) and because it is an alternative embodiment of a known charging unit configuration.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maggio '381 (FR 2,825,381; US Patent No. 6,974,316 B2 relied upon for translation and citations) in view of Haynes '071 (WO 02/52071) and Kisler (US Patent No. 4,517,143) as applied to Claim 11 above, and further in view of Haynes '379 (US Patent No. 6,117,379).

Maggio '381 does not appear to expressly teach that the pneumatic attenuation force is provided by perturbed attenuation air.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the Maggio '134 in order to quench or cool via better penetration of the gas among the filaments (see Haynes '379 col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmit (WO 02/34990 A1; USPAP 2004/0028763 A1 relied upon for translation and citations) and Kisler (US Patent No. 4,517,143) as applied to Claim 11, and further in view of Haynes '379 (US Patent No. 6,117,379).

With respect to Claim 14, Schmit teaches a process of making a non-woven as previously described.

Schmit does not appear to expressly teach that the pneumatic attenuation force is provided by perturbed attenuation air.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the slot of Schmit in order to quench or cool via better penetration of the gas among the filaments (see Haynes '379 col. 1, lines 62-67). This would reduce time spent between die and slot for quenching or cooling because some or more quenching would occur inside the slot.

With respect to Claim 16, Schmit teaches a process of making a non-woven as previously described.

Schmit does not appear to expressly teach that at least one of the opposed diverging sidewalls comprises at least one vortex generator.

Haynes '379 teaches using a bar arrangement 10 in front of airflow, which causes turbulent (perturbed) gas flow (see Haynes '379 col. 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Haynes '379's bar arrangement in front of the air flow of the from the lateral openings<sup>16</sup> of the diffusion chamber 14 of Schmit because it would cause gas flow turbulence (see Haynes '379 col. 1, lines 62-67), which would spread the fiber curtain, it is desirous to spread the curtain since it increases uniformity of the web (see Schmit [0004]).



***Response to Arguments***

Applicant's arguments filed 22 September 2006 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC §102 rejections. Applicant's arguments appear to be on the grounds that:

1) Schmit did not teach Claim 12, which has been incorporated into Claim 11.

Thus, the rejection over Schmit is moot as should be withdrawn.

2) Taylor's electrostatically charged units mounted on the diverging walls are not used to impart a charge to the fibers. Rather they just steer the fibers.

3) Taylor in no ways teaches the requirement of the claim of using two or more oppositely directed charging units, where at least one electrostatic charging unit is located upon each of the diverging sidewalls.

4) Maggio '381's publication date is December 6, 2002, which would make the publication available under 35 USC §102(e) rather than 35 USC §102(b).

5) Maggio '381 was not relied upon for Claim 12, which has been incorporated into Claim 11. Thus, the rejection over Maggio is moot and should be withdrawn.

6) Maggio '134 does not teach that the attenuation air enters only from the sidewall opposite the sidewall having the charging unit.

Applicant argues with respect to the 35 USC §103 rejections. Applicant's arguments appear to be on the grounds that:

7) Haynes '071 is actually WO 02/52071 rather than WO 02/05071.

8) Claim 1 requires an applied electrostatic charge before the fibers enter the diffusion chamber. However, as combined, Haynes '071 locates the electrostatic charging unit at the bottom of the drawing unit and Maggio '134 locates the electrostatic charging assembly inside or downstream of the diffuser. The electrostatic charging of the filaments in fig. 3 is done by a rail integrated inside the diffuser (see col. 4, lines 16-18).

9) Haynes '071 fails to teach the requirement of the claim of using oppositely directed charging units.

10 and 15) Trimble fails to teach two electrostatic charging units that are staggered. Instead Trimble's single electrostatic charging unit has vertically spaced apart rows of electrode pins. Moreover, Trimble's teaching of staggering the blocks of pins refers to their horizontal placement along the full width of the passageway.

11) One skilled in the art would not be motivated to attempt to take the teachings of Haynes '379, which related to improved fiber quenching via induced quench air turbulence and apply them to the fiber attenuator or diffusion chamber of Haynes '071 in view of Maggio '134 because placing a bar in the narrow nozzle or gap would substantially or wholly block the gap. Given the close tolerances shown between the fiber travel path and the air nozzle or gap in the Haynes '071 drawing unit and the Maggio '134 diffusion chamber, placement of such a bar arrangement presents a serious risk of impeding or stopping fiber flow due to catching of the fibers on a bar arrangement. Thus, the combination would have no reasonable chance of success, which would dissuade one skilled in the art.

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12) Creating turbulence in the quench air or in the drawing chamber air flow or the diffusion chamber air flow is not the same as perturbing the air flow by alternatingly augmenting the pressure.

13) There is no proper motivation to combine the references as Maggio '381 does not appear to discuss needing greater voltage or providing motivation to modify the voltage.

14) Haynes '071 only teaches one electrostatic unit 18, which is the composite of 22 and 24.

16) The rejection over Schmit in view of Haynes '379 is actually a 103 rejection rather than a 102 rejection, which is moot over Claims 14-16 given the incorporation of Claim 12 into Claim 11, which Claims 14-16 depend from.

The Applicant's arguments are addressed as follows:

1, 4, and 5) Applicant's arguments with respect to the 102 rejections of Claim 11 over Schmit and Maggio '381 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment of Claim 11.

2) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., imparting a charge to the fibers with electrostatic charging units located on the diverging diffusion chamber walls) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Since applicant's claim only subjects the fibers to the units, this is taken by

the Examiner to mean the same as Taylor's subjecting fibers to a charge using the units on the diverging walls.

2) Moreover, absent perfection in charge application above the diffuser in Taylor, some charge would necessarily be applied by the units in the diffuser.

3) The two units 58 and 58 in Taylor are on opposing diverging sides 42 and 42 of the diffusion chamber as seen in fig. 2.

3, 9, and 14) Having an electrostatic charging device on either side of the chamber would constitute a unit on both sides of a chamber. Thus, the instant Claims are broad enough to read on the two components individually as being individual units.

6) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. the pneumatic attenuation force is provided by air **consisting** of attenuation air only entering from the drawing slot on the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

6) As the claim only requires that there be attenuation air entering only from the slot on the drawing slot sidewall opposing the drawing slot sidewall upon which the electrostatic charging unit is located, the claim is met because Maggio '134 provides attenuation air **comprising** air that comes only from the drawing slot 21 on the sidewall 15 opposite the electrostatic charging unit's sidewall 15.

7) The Examiner acknowledges that Haynes '071 is actually WO 02/52071 rather than WO 02/05071. The reference was made of record in Applicant's IDS, page 3, submitted 26 January 2004.

8) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., subjecting the fibers to an applied electrostatic charge before the fibers enter the diffuser) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As the diffuser taught by Maggio '134 contains both the diffusion chamber, which is diverging sidewalls, and the electrostatic charging rail 11, it is fig. 3's teaching of the diverging sidewalls 15 and 15 (diffusion chamber) after the electrostatic charging rail 11 that meet's Claim 1's limitation of subjecting the fibers to an applied electrostatic charge before the fibers enter the diffusion chamber.

9 and 14) Haynes '071 subjects the fibers to an applied electrostatic charge before the fibers at the end of the draw slot using electrostatic charging units 18 and 22, the charging units being oppositely directed (see Fig. 1). Thus, the two units of are 18 and 22.

10 and 15) Applicant's arguments with respect to the 103 rejections of Claims 2 and 13 over Trimble have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment of Claims 2 and 13.

10 and 15) Moreover, Trimble teaches making the electrostatic charging units locations staggered up and down rather than all in a single line (see Fig. 4, Ref. No. 74 and page 15, lines 24-27). Thus, the staggered pins would teach the limitation of staggering the electrostatic units.

10 and 15) Moreover, as pointed out in Applicant's Arguments submitted 22 September 2006 on page 13, first full paragraph, on page 18, second paragraph, and in Trimble, page 16, lines 5-12, the electrostatic units are staggered across the width of the passageway. Thus, the staggered blocks would teach the limitation of staggering the electrostatic units.

11) Haynes '379 does not teach blocking all of the air flow. Haynes '071 merely teaches blocking enough air flow to cause turbulence see col. 5, lines 41-60).

11) With respect to the alleged expectation of failure, the arguments of counsel cannot take the place of evidence in the record.

11) Moreover, Haynes '379's bars are taught to work in front of sources of air. Even the air entering at the top of the drawing chamber would be included as being able to be made turbulent via use of the bars taught by Haynes '379.

12) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., perturbing the air flow by alternately augmenting the pressure) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Haynes '379 is relied upon to teach perturbing the air, not alternately augmenting the pressure of the air to perturb the air.

13) Maggio '381 is not relied upon to modify the voltage of Maggio '381. Instead, as previously described, Haynes provides motivation as well as the motivation to use conventional electrostatic charging configurations:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Haynes '071's oppositely directed charging units in the diverging sidewalls of Maggio '381 in order to give improvements maximum overall voltage (see Haynes '071, page 16, Table 1), improve formation (page 16, lines 33-35), and because it is a known configuration for electrostatic charging.

16) The Examiner acknowledges that the rejection over Schmit in view of Haynes '379 of Claims 14-16 is actually a 103 rejection rather than a 102 rejection, which was within the 103 section of the Office Action. However, Applicant's arguments with respect to the 103 rejections of Claims 14-16 over Schmit in view of Haynes have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment of Claim 11, which Claim 14 depends from.


### ***Conclusion***

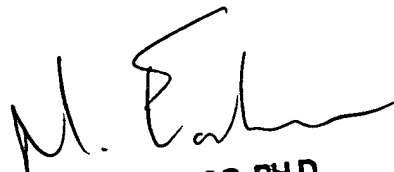
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mo.-Th. 7:30 a.m. - 5 p.m. and alternating Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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